

## MICRONEEDLE ARRAY SYSTEMS

### ABSTRACT OF THE DISCLOSURE

The present invention relates to systems of microneedle arrays to align and form optical components. Active components such as lasers are combined with optical fibers.

- 5 Microneedles are fabricated using techniques such as laser drilled Kapton, and combined with optical fiber, using bump bonding and UV curing adhesives to manufacture a variety of optical components.